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EXAMINER	
ARPIN, ANTHONY	
ART UNIT	PAPER NUMBER
4164	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/595,490	GILLES ET AL.	
	Examiner	Art Unit	
	ANTHONY J. ARPIN	4164	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 April 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/21/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Numerous features in the claims are not shown in the drawings. Specifically, the special couplings recited in claims 5 and 13, the capacitor recited in claims 6 and 14, and the two part ballast recited in claim 17 are not shown in the drawings. Therefore, these feature(s) of the invention specified in the claims must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

3. The drawings are also objected to because of images on the left side of the drawings that appears to be a decorative banner. It is not clear how these images relate to the invention and they should be removed or Applicant should clearly indicate what the images are.

4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures

appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The specification is objected to because there are several minor grammatical errors that appear to have arisen from the translation of the application (E.g. Page 1, Para. 4: "Interrupting suddenly the current induces a high voltage. . .by the incandescent filaments."; Page 1, Para. 5" "tube's impedance decreases significantly." (*missing an article before "tube's");* Page 2, Para. 2: "What is interesting to point out is not the current flowing through the lamp but moreover a control signal that is included into the circuitry for monitoring the lamp operation."). Accordingly, Applicant's cooperation is requested in

correcting these errors along with any errors of which Applicant may become aware of after reviewing the specification.

6. The following guidelines illustrate the preferred layout for the specification of a utility application. Applicant has not included headings within the specification and therefore, the following guidelines are suggested for the applicant's use:

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(f) BACKGROUND OF THE INVENTION.
  (1) Field of the Invention.
  (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(g) BRIEF SUMMARY OF THE INVENTION.
(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(i) DETAILED DESCRIPTION OF THE INVENTION.
(j) CLAIM OR CLAIMS (commencing on a separate sheet).

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter

which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, it is unclear how the microprocessor circuit actually generates the “voltage pulses” to be applied to the electrodes for exciting the fluorescent gas as recited in claim 1 and claim 9. Further, it is unclear how the “special couplings. . .are activated by the ballast in order to short cut the filaments of the electrodes" as recited in claims 5 and claim 13. Still further, it is unclear how the capacitor is temporally connected to increase the tension between the electrodes as recited in claim 6 and claim 14. Finally, it is unclear how the two part ballast is assembled to have one part work specifically with “the main sector” and the second part work with the “non periodic pulses characterizing the invention of this patent.” Because of the lack of specific guidance from the specification, the examiner respectfully submits that the quantity of experimentation needed to make and/or use the invention would be undue. Accordingly, claims 1, 5, 6, 9, 13, and 14 and the claims which depend therefrom are rejected for lack of enablement under 35 U.S.C. 112, first paragraph.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1-17 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph. Specifically, claim 1 and claim 9

both contain more than one sentence. Because claim(s) must be in one sentence form, claims 1 and 9 as well as 2-8 and 10-17 by virtue of their dependence on claims 1 and 9 are rejected. Further, "special couplings" in claim 5 and "the main sector" in claim 17 appear to have improper antecedent basis. Finally, it appears that the term “integers” in claims 1 and 9 is used by the claim to mean something other than its accepted meaning of “one of the positive or negative numbers” or “a complete entity” (Ransom House Dictionary). This appears to be a translation error as there is no evidence of Applicant being his own lexicographer.

It is unclear whether claims 1 – 8 are method type claims or apparatus type claims. For purposes of examination, Examiner interpreted claims 1 - 8 as method type claims. Additionally, claims 9 – 17 appear to be apparatus type claims with functional limitations. However, the “pulse” or “operating mode” set forth in claim 9 is not physical and only exists in operation. Accordingly, for purpose of examination Examiner interpreted the limitations in claims 9 – 16 as similar to the limitations as set forth in claims 1 – 8.

It appears that the problems addressed above are due to translation errors and could probably be corrected by filing an amended set of claims.

Claim Rejections - 35 USC § 101

11. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 18 and 19 are directed to non-statutory subject matter. Specifically, Claims 18 and 19 recite merely a signal. Accordingly, because a signal is not a process, machine, manufacture or a composition of matter, claims 18 and 19 are rejected as being directed to non-patentable subject matter.

Claim Rejections - 35 USC § 102

Examiner's Note: It appears claims 1-17 are in "two-part form" (*i.e. "European form"*). As this is similar to *Jepson* type claims in United States practice, the limitations in claims 1 and 9 before the language: "ballast operating mode *differs from existing systems by the fact that*" is treated as admitted prior art. Accordingly, only the improvement from existing systems is considered on the merits.

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. **Claims 1, 2, 4, 9, 10, 12 and 17** are rejected under 35 U.S.C. 102(b) as being anticipated by Lesea (U.S. Patent US 4,415,839) as best understood by Examiner.

Regarding **claim 1**, Lesea discloses voltage pulses applied to the electrodes for exciting the fluorescent gas (Fig. 1, 68), such pulses consisting of non periodic voltage levels (Summary; Col. 3, l. 68 – Col. 4, l. 5) separated by variable duration dead times (Summary, Col. 3, l. 58 - 64). In particular, the electronic ballast 10 includes a pulse generator 30 that generates pulses or signals which are varied in frequency and/or width (*i.e. non-periodic*) that control the transistors (24 and 26) connected to the power supply 22 so as to develop at the juncture of the transistors a non-periodic pulse (Fig. 2, LINE 56) which is coupled to the lamp 12 by the network 28 (See e.g. Fig. 1, 2 and Col. 5, l. 30 - 45).

Regarding **claim 2**, Lesea further discloses that the ballast produces alternative voltage pulses (Col. 5, l. 35 – 36).

Regarding **claim 4,** Lesea further discloses that the ballast monitors each dead times duration according to real time samplings of the current crossing gas in the fluorescent tubes (Summary; Col. 3, l. 65 - Col. 4, l. 3).

Claims 9, 10 and 12 are rejected for at least all the same reasons set forth above in the rejection of claims 1, 2, and 4.

Regarding **claim 17**, Lesea further discloses that the ballast includes two parts; the first being a standard ballast functioning simply with the main sector and the second being a specifically assembled part to work with the non periodic pulses characterizing the invention of this patent (*The ballast 10 includes multiple parts including a pulse generator 30 which is directed or assembled to work with the non-periodic pulses*. Fig. 1 and Col. 4, l. 43 – 47).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. **Claim 3 and claim 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Leslea in view of Ribarich et al. (U.S. Patent 6,617,805) as best understood by Examiner.

Regarding **claim 3**, Leslea discloses that the ballast monitors the voltage signals as well as dead times (See e.g. Summary, Col. 3. l. 65 - Col. 4, l. 3; Col. 5, l. 38 – 41; Fig. 1 and Fig. 2 (*to illustrate dead times 244 in the signal)*). Leslea does not disclose monitoring the voltage signals as well as dead times by means of a programmed algorithm per se (*Using a programmed algorithm (e.g. on a programmable integrated circuit) in an electronic ballast, is well known in the art* (See e.g. Ribarich, Summary)). Ribarich discloses using a programmed integrated circuit (i.e. a programmed algorithm) to monitor operating conditions (Ribarich Col. 3, l. 8 – 13). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Leslea by implementing a programmed algorithm that a ballast uses to monitor the voltage signals as well as dead times. As one of ordinary skill in the art would appreciate, the suggestion/motivation for doing so would be that by implementing

a programmed algorithm (*e.g. on a programmed integrated circuit*) the number of external components in an electronic ballast are reduced (See e.g. Ribarich Summary, Col. 3, l. 66 – Col. 4, l. 1).

Regarding **claim 11, claim 11** is rejected for all the same reasons as set for above in the rejection of claim 3. Additionally, although claim 11 recites "producing" (*as opposed to "monitoring" as recited in claim 3)* voltage signals as well as dead times by means of programmed algorithms. Ribarich discloses that a ballast **produces** (**emphasis added***)* the voltage signals as well as dead time by means of programmed algorithm (*i.e. a programmed integrated circuit)* (Ribarich Col. 3, l. 3 – 13). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Leslea by Ribarich for at least all the same reasons recited in the rejection of claim 3.

16. **Claim 5** rejected under 35 U.S.C. 103(a) as being unpatentable over Leslea in view of Lau (U.S. Patent 5,444,333) as best understood by Examiner.

Leslea does not disclose that the special couplings of connexion/fixation of the fluorescent tubes are activated by the ballast in order to short cut the filaments of the electrodes of the fluorescent tubes in such a way to cancel the current though them and to thus avoid the losses in voltage. Lau discloses that the special couplings of connexion/fixation of the fluorescent tubes are activated by the ballast in order to short cut the filaments of the electrodes of the fluorescent tubes in such a way to cancel the current though them and to thus avoid the losses in voltage (Lau, Abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of

Leslea by incorporating ceasing the flow of current though the filaments of a fluorescent lamp in order to increase the efficiency of the lamp (i.e. "to *avoid wasting energy"* See Lau, Abstract).

17. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Leslea in view of Bildgen (U.S. Patent 5,914,569) as best understood by Examiner.

Leslea does not disclose that conduction through gas of the fluorescent tubes is ignited by the temporary connection of a capacitor making it possible to increase the tension between the electrodes of each fluorescent tube and that this capacitor is disconnected as soon as conduction is obtained. Bildgen discloses that conduction through gas of the fluorescent tubes is ignited by the temporary connection of a capacitor making it possible to increase the tension between the electrodes of each fluorescent tube and that this capacitor is disconnected as soon as conduction is obtained (Bildgen, Col. 3, l. 38 – 45). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Leslea by incorporating the temporary connection of a starting capacitor to increase the tension between the electrodes so as to facilitate ignition of the gas in the tubes (See e.g. Bildgen, Col. 3, l. 38 – 45).

18. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Leslea and Bildgen as applied to claim 6 above, and further in view of Toyama (U.S Patent 6,720,740) as best understood by Examiner.

Bildgen does not disclose that the ballast modifies the current level crossing the gas in such way that the current crossing the capacitor is minimized before the disconnection of the capacitor. Toyama discloses a rational for switching or disconnecting the capacitor when the current crossing the capacitor is minimized in order to reduce switching (or disconnection) loss (See Toyama Summary). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the operating mode of Bildgen by minimizing the current crossing the capacitor before disconnection of the capacitor, as disclosed by Toyama, in order to promote efficiency (See e.g. Toyama Summary).

19. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Leslea in view of Katyl et al. (U.S. Patent 6,181,086) further in view of Vakil et al. (U.S. Patent 7,042,170) as best understood by Examiner.

Leslea does not disclose that the ballast communicates with a remote central control unit through a wired or wireless link for performance monitoring and remote failure detection. Katly et al. discloses that the ballast communicates with a remote central control unit through a wired link for performance monitoring and remote failure detection (See e.g. Abstract and Summary, Col. 3, l. 33 – 34). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the operating mode of Leslsa to include a ballast that communicates with a remote central control unit for performance monitoring and remote failure detection, as taught in Katly et al., because incorporating it would allow for more effective management of energy usage as well as system maintenance (See Katly et al., Summary, Col. 3, l. 17 – 34). Katly does not

expressly disclose that the ballast communicates though a wired or wireless link. However, Vakil et al. discloses that the ballast (Vakil et al. Fig. 3: *a ballast which incorporates a microprocessor 42)* communicates with a remote central control unit 78 though a wired or wireless link (Vakil et al. Fig. 18, 42 and Col. 7, l. 39 – 49). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Katly et al. by facilitating communication though a wired or wireless link, as taught in Vakil et al., because as one of ordinary skill in the art would appreciate, facilitating communication though both a wired or wireless link enables cost effective and/or flexible implementation of the system.

20. **Claims 13 – 16** are rejected for at least all the same reasons as set forth above in the rejection of claims 5 – 9 as best understood by Examiner.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY J. ARPIN whose telephone number is 571-270-1957. The examiner can normally be reached on M-F 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on 571-272-2059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gregory J. Toatley, Jr./
Supervisory Patent Examiner, Art Unit 2877

AA